

L19 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2003:853147 CAPLUS

DN 139:339085

ED Entered STN: 31 Oct 2003

TI Electrodeposition and coated articles with uniform coating thickness  
IN Shimazaki, Akihiko; Midokawachi, Susumu; Tominaga, Akira; Nishiguchi, Shigeo; Nemoto, Yukihiro; Kato, Kiyoshi

PA Kansai Paint Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 12 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C25D013-06

ICS C09D005-44; C09D163-00; C09D175-04

CC 42-2 (Coatings, Inks, and Related Products)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003306796	A2	20031031	JP 2002-58570	20020305 <--
PRAI	JP 2001-65664	A	20010308		
	JP 2002-34905	A	20020213		

#### CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2003306796	ICM	C25D013-06
	ICS	C09D005-44; C09D163-00; C09D175-04

AB In the electrodeposition of cationic electrodeposition coatings, amts. of electricity necessary for the coatings to start deposition is 100-400 C/m<sup>2</sup>. The process is suitable for coating on automotive bodies. Thus, a base resin varnish was prepared by reacting Epikote 828EL (epoxy resin) with bisphenol A, further reacting with liquid HCHO-PhOH-m-xylene copolymer, diethanolamine, and diethylenetriamine ketimine, and mixing with Bu Cellosolve. A hardener comprised a blocked polyisocyanate prepared by reacting Cosmonate M 200 (crude MDI) with 2,2-dimethylolbutanoic acid in a MIBK/ethylene glycol monobutyl ether mixture, further reacting with propylene glycol. A cationic electrodeposition coating comprised an emulsion containing the base resin varnish and the hardener, a pigment paste, and deionized water and gave a uniform layers on Zn phosphate-treated SPCC steel plate.

ST xylene formaldehyde resin modified epoxy electrodeposition coating;  
blocked polyisocyanate hardener epoxy cationic electrodeposition coating

IT Crosslinking agents  
(blocked aromatic polyisocyanates; isocyanate-curable xylene resin-modified epoxy cationic electrodeposition coatings for uniform layers)

IT Electrodeposits  
(cationic; isocyanate-curable xylene resin-modified epoxy cationic electrodeposition coatings for uniform layers)

IT Phenolic resins, uses  
RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

(epoxy, xylene-based; isocyanate-curable xylene resin-modified epoxy cationic electrodeposition coatings for uniform layers)

IT Electrodeposition  
(isocyanate-curable xylene resin-modified epoxy cationic electrodeposition coatings for uniform layers)

IT Epoxy resins, uses  
RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

- (phenolic, xylene-based; isocyanate-curable xylene resin-modified epoxy cationic electrodeposition coatings for uniform layers)
- IT Polyurethanes, preparation  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (prepolymers, polyisocyanates, blocked; isocyanate-curable xylene resin-modified epoxy cationic electrodeposition coatings for uniform layers)
- IT Polyoxyalkylenes, uses  
 RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (reaction products with  $\epsilon$ -caprolactone, Epikote 828EL, bisphenol A, diethanolamine, and diethylenetriamine ketimine derivs., base resin; isocyanate-curable xylene resin-modified epoxy cationic electrodeposition coatings for uniform layers)
- IT 5124-30-1, Hydrogenated MDI 79103-62-1, Desmodur W  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (Me Et ketoxime-blocked; isocyanate-curable xylene resin-modified epoxy cationic electrodeposition coatings for uniform layers)
- IT 39462-15-2, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (Zn phosphate-treated substrate; isocyanate-curable xylene resin-modified epoxy cationic electrodeposition coatings for uniform layers)
- IT 50-00-0DP, Formaldehyde, reaction products with bisphenol A, Epikote 828EL, phenol, m-xylene, diethanolamine, and diethylenetriamine ketimine derivs. 80-05-7DP, Bisphenol A, reaction products with Epikote 828EL, formaldehyde, phenol, m-xylene, diethanolamine, and diethylenetriamine ketimine derivs. 108-38-3DP, m-Xylene, reaction products with bisphenol A, Epikote 828EL, formaldehyde, phenol diethanolamine, and diethylenetriamine ketimine derivs. 108-95-2DP, Phenol, reaction products with bisphenol A, Epikote 828EL, formaldehyde, m-xylene, diethanolamine, and diethylenetriamine ketimine derivs. 111-40-0DP, Diethylenetriamine, ketimine derivs., reaction products with bisphenol A, Epikote 828EL, formaldehyde, phenol, m-xylene, and diethanolamine 111-42-2DP, Diethanolamine, reaction products with bisphenol A, Epikote 828EL, formaldehyde, phenol, m-xylene, and diethylenetriamine ketimine derivs. 502-44-3DP,  $\epsilon$ -Caprolactone, reaction products with polypropylene glycol, Epikote 828EL, bisphenol A, diethanolamine, and diethylenetriamine ketimine derivs. 25085-99-8DP, Epikote 828EL, reaction products with bisphenol A, formaldehyde, phenol, m-xylene, diethanolamine, and diethylenetriamine ketimine derivs. 25322-69-4DP, PP 1000, reaction products with  $\epsilon$ -caprolactone, Epikote 828EL, bisphenol A, diethanolamine, and diethylenetriamine ketimine derivs. 56743-27-2DP, Dimethylolbutanoic acid, reaction products with bisphenol A, Epikote 828EL, formaldehyde, phenol, m-xylene, and diethylenetriamine ketimine derivs.  
 RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (base resin; isocyanate-curable xylene resin-modified epoxy cationic electrodeposition coatings for uniform layers)
- IT 57-55-6, Propylene glycol, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (crude MDI-based polyurethane polyisocyanate blocked with; isocyanate-curable xylene resin-modified epoxy cationic electrodeposition coatings for uniform layers)
- IT 96-29-7, Methyl ethyl ketoxime  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (hydrogenated MDI blocked with; isocyanate-curable xylene resin-modified epoxy cationic electrodeposition coatings for uniform layers)

IT 616207-82-0P  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
(Reactant or reagent)  
(propylene glycol-blocked; isocyanate-curable xylene resin-modified  
epoxy cationic electrodeposition coatings for uniform layers)  
RN 5124-30-1  
RN 79103-62-1  
RN 39462-15-2  
RN 50-00-0DP  
RN 80-05-7DP  
RN 108-38-3DP  
RN 108-95-2DP  
RN 111-40-0DP  
RN 111-42-2DP  
RN 502-44-3DP  
RN 25085-99-8DP  
RN 25322-69-4DP  
RN 56743-27-2DP  
RN 57-55-6  
RN 96-29-7  
RN 616207-82-0P

L19 ANSWER 2 OF 3 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN

AN 2004-206750 [20] WPIX

DNN N2004-163955 DNC C2004-082559

TI Electrodeposition coating film formation to produce coated material,  
involves adjusting electric charge for initial precipitation of coating  
film, to preset value, during coating of cation electrodeposition coating  
material.

DC A21 A25 A85 G02 M11 X25

PA (KAPA) KANSAI PAINT CO LTD

CYC 1

PI JP 2003306796 A 20031031 (200420)\* 12 C25D013-06 <--

ADT JP 2003306796 A JP 2002-58570 20020305

PRAI JP 2002-34905 20020213; JP 2001-65664 20010308

IC ICM C25D013-06

ICS C09D005-44; C09D163-00; C09D175-04

AB JP2003306796 A UPAB: 20040324

NOVELTY - Electrodeposition coating film formation method involves  
adjusting electric charge for initial precipitation of coating film to  
100-400 C/m<sup>2</sup>, during electrodeposition coating of a cation  
electrodeposition coating material.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for coated  
material.

USE - For forming electrodeposition coating film, to produce coated  
material (claimed).

ADVANTAGE - The electrodeposition coated film or the coated material  
with excellent uniform paint work and rust-proof property, and with  
restrained film thickness of skin, is produced efficiently and  
economically, by the electrodeposition coating film formation method. The  
method improves internal film formability.

DESCRIPTION OF DRAWING(S) - The figure shows the graph of dry weight  
(mg) of coating material with respect to electric charge (X). (Drawing  
includes non-English language text).

Dwg.3/4

FS CPI EPI

FA AB; GI

MC CPI: A10-E01; A11-B05A; A12-B01; A12-B01L; G02-A05; M11-G  
EPI: X25-R04

L19 ANSWER 3 OF 3 JAPIO (C) 2005 JPO on STN

AN 2003-306796 JAPIO

TI METHOD OF FORMING ELECTRODEPOSITION COATING FILM AND COATED PRODUCT

IN SHIMAZAKI AKIHIKO; MIDOKOCHI SUSUMU; TOMINAGA AKIRA; NISHIGUCHI JIRO;  
NEMOTO YUKIHIRO; KATO KIYOSHI  
PA KANSAI PAINT CO LTD  
PI JP 2003306796 A 20031031 Heisei  
AI JP 2002-58570 (JP2002058570 Heisei) 20020305  
PRAI JP 2001-65664 20010308  
JP 2002-34905 20020213  
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 2003  
IC ICM C25D013-06  
ICS C09D005-44; C09D163-00; C09D175-04  
AB PROBLEM TO BE SOLVED: To provide a method of forming a electrodeposition  
coating film which has excellent uniform coating property to improve film  
forming property on an inside part while suppressing the film thickness of  
an outside plate in a material to be coated which has a bag like structure  
and a coated product.  
SOLUTION: A. In the method of forming an electrodeposition coating film,  
the quantity (a) of electricity required to start the deposition of the  
coating film is 100-400 C/m<sup>2</sup> in a electrodeposition coating with  
a cationic electrodeposition coating material. B. The polarity resistance  
(b) per unit film thickness is 50-300 kΩ·cm/<sup>2</sup>μm in the  
method of forming the electrodeposition coating film in the  
electrodeposition coating with the cationic electrodeposition coating  
material.  
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